CLAIMS:

1. A method of applying a self-assembled monolayer of a molecular species to a surface of an article, comprising:

- providing on at least a portion of a stamping surface of a stamp a self-assembled monolayer-forming molecular species having a first functional group selected to attach to said surface, and a second functional group that is exposed when the species form a monolayer, said second group being polar,

- transferring the molecular species from the stamping surface to a first portion of the article surface, and

- allowing the molecular species to spread evenly from the first portion of the article surface to a second portion of the article surface, characterized in that the spreading is accomplished with the stamp and the article is placed in a vacuum or in a gaseous atmosphere.

2. A method of applying self-assembled monolayers of two molecular species to a surface of an article, comprising:

- providing on at least a portion of a stamping surface of a stamp a first self-assembled monolayer-forming molecular species having a first functional group selected to attach to said surface, and a second functional group that is exposed when the species form a monolayer, said second group being polar,

- transferring the molecular species from the stamping surface to a first portion of the article surface, characterized by

- providing on at least a portion of a stamping surface of a stamp a second self-assembled monolayer-forming molecular species having a first functional group selected to attach to said surface, and a second functional group that is exposed when the species form a monolayer, said second group being polar or non-polar,

- transferring the molecular species from the stamping surface to said first portion of the article surface coated with a monolayer of said first molecular species, and

- allowing the second molecular species to spread evenly over the first monolayer to a second portion of the article's surface.

3. A method according to claim 2, wherein the spreading is accomplished with the stamp and the article is placed in a vacuum or in a gaseous atmosphere.

4. A method according to claim 3, wherein the second functional group of the second self-assembled monolayer-forming molecular species is non-polar.

5. A method according to any one of claims 1, 3 or 4, wherein the gaseous atmosphere is air.

6. A method according to any one of claims 1-5, wherein the article' surface is a metal surface and the self-assembled monolayer-forming molecular species is selected from the group consisting of:

- an omega-functionalized thiol having the general formula R'-A-R", wherein R' is –SH, A is $-(CHR)_n-$ where R is H or $-CH_3$, and n is an integer from 1 to 30, and R" is a polar group,

- a disulphide having the general formula R"'-A-S-S-A'-R", wherein R"' is a polar or a non-polar group, A and A' independently are $-(CHR)_n-$ where R is H or $-CH_3$, and n is an integer from 1 to 30, and R" is a polar group, different from or the same as R"', and

- a thioether having the general formula R"'-A-S-A"-R" or R"'-A-S-A'-S-A"-R", wherein R"' is a polar or a non-polar group, A, A', and A" independently are $-(CHR)_n-$ where R is H or $-CH_3$, and n is an integer from 1 to 30, and R" is a polar group, being different from or the same as R"'.

7. A method according to claim 6, wherein the polar group R" is a functional group selected from the group consisting of –OH, –NCO, $-NH_2$, –COOH, $-NO_2$, -COH, -COCl, $-PO_4^{2-}$, $-OSO_3^-$, $-SO_3^-$, $-CONH_2$, $-(OCH_2CH_2)_nOH$, $-(OCH_2CH_2)_nOCH_3$, $-PO_3H^-$, -CN, –SH, $-CH_2I$, $-CH_2Cl$, and $-CH_2Br$, wherein n is an integer from 1 to 100.

8. An article having a surface comprising at least one isolated region of a self-assembled monolayer of a molecular species, characterized in that said region has a lateral dimension within the range of from 1 to 100 nm.

9. A method of producing at least one nanowire, or a grid of nanowires, characterized in that the method comprises:

- providing a surface with a second layer of a second material and providing a surface layer of a first material thereon,

- providing on the surface layer at least one region of a self-assembled monolayer (SAM) of a molecular species, said region having a lateral dimension within the range of from 1 to 100 nm,

- applying on the surface layer an etchant selected as one that removes unprotected first material, but leaves the SAM and the protected first material underlying said at least one region of SAM unaffected,

- applying an etchant selected as one that removes essentially the entire second layer, and

- isolating said first material, with or without said SAM, thus forming at least one nanowire or a grid of nano-wires.

10. A method of manufacturing an electronic device comprising the step of providing a patterned layer with a desired pattern on a surface of an article, characterized in that the patterned layer is defined by providing a monolayer according to any of the claims 1 or 2.

11. A method as claimed in claim 10, characterized in that an electronic device is provided with a field effect transistor having a source and a drain electrode, a channel, a gate electrode and a gate dielectric, and that the desired pattern defines the channel between the source and the drain electrode.

12. A method as claimed in claim 10, characterized in that

- the article comprises at its surface a stack of a first patterned layer of electrically conductive material and a second layer of semiconductor material, in which first layer a first and a second, mutually isolated electrode are defined;

- the desired pattern is such that a perpendicular projection thereof on the first layer overlaps with the first and the second electrode;

- after defining the pattern, the second layer is etched with an etchant selected as one that removes unprotected semiconductor material, but leaves the pattern and the protected semiconductor material underlying the pattern unaffected.

13. A method of manufacturing an electronic device comprising the step of providing nanowires on a substrate, characterized in that the nanowires obtainable with the method according to claim 9 are provided.